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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/568,973 | PABST, MICHAEL J. | |
| | Examiner | Art Unit | |
| | KISHIN G. BELANI | 2443 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *15-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

**Claims 15-17 and 19-25** are objected to because of the following informalities:

These claims include abbreviated designations in parentheses, such as (AP), (TE), (SS), (SP), (MP), (NTBA), (AL), etc. Please remove all such designations from the claim text of these claims.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 15, 20** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, the claim text uses the word "vicarious", (meaning acting for another) without making it clear who is acting for whom in the claimed element.

The claimed element d) is not written clearly. The examiner has interpreted it to mean "transmitting at least one stored test signal from the memory unit to the content-server".

The claimed element e) is not comprehendible. Please rewrite the claim element e).

The amendment to claim element f) is incoherent, since the first line states "testing at least a bandwidth available to the telecommunication device (TE)", which is then followed by the amended text about adjusting to one of all available protocols, and then ending with a description of the intended use of preventing "time out" problems. It is not clear which action prevents said "time out" problems: testing bandwidth to ensure adequate bandwidth availability, or proper protocol selection, or activating additional communication channels to achieve dynamic bandwidth control, as claimed in claim 29 later. Please provide a clear description of what the invention really is and how it accomplishes the prevention of said "time out" problems, so that the examiner can make equitable comparison with the prior art.

Also, the claimed element f) includes the text "as a remote station adjusts itself to a protocol proposed by the remote station". It is not clear which one is "a remote station" and which one is "the remote station".

The claim text for f) uses the text "so that said interface circuit ...". This text represents "intended use" which carries no patentable weight. Please remove this text from the claim element f).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern (U.S. Patent Publication # 7,313,130 B2)** and further in view of **Lawrence (U.S. Patent Publication # 6,825,196 B1)** and further in view of **Kukic (U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Hughes et al. (U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov (U.S. Patent Application Publication # 2003/0225889 A1).**

Consider **claim 15**, Murray et al. show and disclose a method for establishing a virtual electronic teaching system with a central content-server for an e-learning or tele-teaching event and with a workstation (AP) of a person participating in the e-learning or tele-teaching event, utilizing a telecommunication network for connection to said content-server (Abstract that discloses a distance learning method as a client/server

implementation with remote client facilities; Fig. 1 that shows a Central Office 10 that provides learning resources (mainframes 12 and 14 (i.e. central content-servers), storage 16 and router 20 with interface circuits that provide connections to remote stations 32 (i.e. workstation AP)); column 2, line 60 through column 3, line 27 disclose configuring multiple remote training facilities to make them portable and provide the online experience to students when using a real-time environment of a host system using ISDN telecommunication technology); and

an interface circuit (SS) connectable to the telecommunication device (TE) or to the workstation (AP) (Fig. 1, router 20 and remote workstations 32 connected to the ISDN network 36 via remote hub router 34 (interface circuit SS); column 4, lines 37-45 which disclose that the router 20 provides support for a wide variety of protocols and network media between the central facilities resources and the remote sites where students and teachers participate in an e-learning or tele-teaching event);

a) registering the interface circuit (SS) to said content-server by means of a login procedure stores in the memory unit (SP) (column 6, lines 1-30 that describe login procedures for each of the three types of content-servers (mainframes 12, NT servers 14, and UNIX servers 14) required to register remote laptop 32 users (see Fig. 1));

b) establishing a connection ***vicarious*** for the telecommunication device (TE) connected to said main distribution via a subscriber line or subscriber modem and splitter or a network termination (NTBA) and subscriber lines (AL), between the interface circuit (SS) and said content-server (Fig. 1; column 4, lines 37-45 which disclose that the router 20 provides support for a wide variety of protocols and network

media between the central facilities resources and the remote sites; further disclosing that the router comprises network interfaces resident on port adapters, that provide a connection between the router's Peripheral Component Interconnect (PCI) busses and external networks, supporting plurality of interfaces, such as Ethernet, Token Ring, FDDI, ATM, serial, ISDN, and HSST, thereby disclosing establishing a connection for the telecommunication device (TE, considered by the examiner to be part of the hub router 34) connected to said main distribution (ISDN cloud) via a subscriber line (ISDN line 36 in Fig. 1) between the interface circuit (hub router 34 corresponding to SS) and the content-servers 12-14; column 6, lines 1-30 disclose the same details).

However, Murray et al. do not specifically disclose a telecommunication network having a main distribution connected to an exchange with an access multiplexer and a splitter or a splitter connected to or integrated in the main distribution, and with analog or digital telecommunication devices (TE), and an interface circuit (SS) connectable to the telecommunication device (TE) or to the workstation (AP), the interface circuit (SS) has a memory unit (SP) and a microprocessor (MP), and for automatic test done by the interface circuit (SS) (Note: Even though Murray et al. do not show that the interface circuit (SS) corresponding to hub router 34 has a memory unit (SP) and a microprocessor (MP), it is a well known fact that any router would necessarily include a memory and a processor in order to function as a router; furthermore the additional text "and for automatic test done by the interface circuit (SS)" appears to be unrelated residual text that makes no sense in the context of the claim), the method comprises the steps of:

c) determining, a type of connection pending on the communication interface (MFE) of the interface circuit (SS);

d) transmitting at least one in the memory unit (SP) a stored test signal to the content-server;

e) evaluating an acknowledgement for the test information received there returned, in a return direction, by the content-server; and

f) testing at least a bandwidth available to the telecommunication device (TE) ***and all available protocols in communication with said content –server as a remote station adjusts itself to a protocol proposed by the remote station, so that said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Redfern discloses the claimed method, further comprising a telecommunication network having a main distribution connected to an exchange with an access multiplexer and a splitter or a splitter connected to or integrated in the main distribution, and with analog or digital telecommunication devices (TE), and an interface circuit (SS) connectable to the telecommunication device (TE), or to the workstation (AP) (Figs. 1a and 1b that show a telecommunication network (PSTN 205 and Internet 208) having a main distribution (101) connected to an exchange (Central Office 200) and with an access multiplexer and a splitter (DSLAM 207 and POTS splitter 201) or a splitter (POTS Splitter 201) connected to or integrated in the main distribution, and with analog or digital telecommunication devices (TE) (in Fig. 1b,

phone 105), and an interface circuit (SS) (in Fig. 1b, POTS Splitter 102) connectable to the telecommunication device (TE) (in Fig. 1b, phone 105) or to the workstation (AP) (in Fig. 1b, computer 104); column 3, lines 29-58 disclose the same details).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a telecommunication network having a main distribution connected to an exchange with an access multiplexer and a splitter or a splitter connected to or integrated in the main distribution, and with analog or digital telecommunication devices (TE), and an interface circuit (SS) connectable to the telecommunication device (TE), or to the workstation (AP), as taught by Redfern, in the method of Murray et al., so as to provide cost-effective network connectivity to remotely distributed stations.

However, Murray et al., as modified by Redfern, do not specifically show that the interface circuit (SS) has a memory unit (SP) and a microprocessor (MP), and for automatic test done by the interface circuit (SS), and the steps of:

c) determining, a type of connection pending on the communications interface (MFE) of the interface circuit (SS);

d) transmitting at least one in the memory unit (SP) a stored test signal to the content-server;

e) evaluating an acknowledgement for the test information received there returned, in a return direction, by the content-server; and

f) testing at least a bandwidth available to the telecommunication device (TE) ***and all available protocols in communication with said content –server as a remote***

***station adjusts itself to a protocol proposed by the remote station, so that said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event.***

In the same field of endeavor, Lawrence discloses the claimed method, including: c) determining, a type of connection pending on the communications interface (MFE) of the interface circuit (SS) (Abstract that discloses a data switching system that allows any arbitrary types of connections to be established over arbitrary link types; further disclosing a connection routing and signaling controller that determines routes for connection over any link types; column 2, lines 36-44 and column 5, lines 31-39 disclose the same details).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to determine, a type of connection pending on the communications interface of the interface circuit, as taught by Lawrence, in the method of Murray et al., as modified by Redfern, so as to set up a matching protocol to support the connection.

However, Murray et al., as modified by Redfern and Lawrence, do not specifically disclose that the interface circuit (SS) has a memory unit (SP) and a microprocessor (MP), and for automatic test done by the interface circuit (SS), and the steps of:
d) transmitting at least one in the memory unit (SP) a stored test signal to the content-server;

e) evaluating an acknowledgement for the test information received there returned, in a return direction, by the content-server; and

f) testing at least a bandwidth available to the telecommunication device (TE) ***and all available protocols in communication with said content –server as a remote station adjusts itself to a protocol proposed by the remote station, so that said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Kukic discloses the claimed method, including the steps of;

d) transmitting at least one in the memory unit (SP) a stored test signal to the content-server (Fig. 1 that shows a transmitter 24 and a receiver 36; paragraph 0011 which discloses a method for determining link characteristics in order to calculate the optimal data rate for a group of links, by transmitting a test signal over the link); and

e) evaluating an acknowledgement for the test information received there returned, in a return direction, by the content-server (paragraph 0011 which further discloses a receiver for assisting in determining the characteristics of the link being tested based on the characteristics of the test signal received at the receiver, and a processor for determining the optimal transmission rate based on the characteristics of the links).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to transmit at least one in the memory unit (SP) a stored test signal to the content-server; and evaluate an acknowledgement for the test

information received there returned, in a return direction, by the content-server, as taught by Kukic, in the method of Murray et al., as modified by Redfern and Lawrence, so as to determine the data rate the remote station is capable of handling.

However, Murray et al., as modified by Redfern, Lawrence and Kukic, do not specifically disclose that the interface circuit (SS) has a memory unit (SP) and a microprocessor (MP), and for automatic test done by the interface circuit (SS), and the step of:

f) testing at least a bandwidth available to the telecommunication device (TE) ***and all available protocols in communication with said content –server as a remote station adjusts itself to a protocol proposed by the remote station, so that said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Kloninger et al. disclose the claimed method, including showing that the interface circuit (SS) has a memory unit (SP) and a microprocessor (MP), and for automatic test done by the interface circuit (SS), and the step of testing at least a bandwidth available to the telecommunication device (Fig. 1A that shows a central controller 106 acting as the interface circuit with memory 106 to store test measurements and a policy engine 120 that includes a microprocessor to process test measurements; paragraphs 0031 and 0035 disclose the same details; paragraph 0002 that discloses streaming e-learning applications; Fig. 1A that shows a Test Agent 124; paragraph 0026 which discloses that the test agent 124 may provide

RTSP and WMS streaming tests, which are useful in determining overall stream quality and bandwidth available for streaming).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an interface circuit with a memory unit and a microprocessor, and for automatic test done by the interface circuit, and the step of testing at least a bandwidth available to the telecommunication device, as taught by Kloninger et al., in the method of Murray et al., as modified by Redfern, Lawrence and Kukic, so as to determine the data rate the content-server is capable of handling.

However, Murray et al., as modified by Redfern, Lawrence, Kukic, and Kloninger et al., do not specifically disclose testing ***all available protocols in communication with said content –server as a remote station adjusts itself to a protocol proposed by the remote station, so that said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Hughes et al. disclose the claimed method, wherein the interface circuit tests ***all available protocols in communication with said content –server as a remote station adjusts itself to a protocol proposed by the remote station*** **(column 12, lines 55-62 which disclose that a master controlling connections on a VSI (Virtual Switch Interface) is required to select the version of the VSI protocol used by the slaves; further disclosing that when a new slave is discovered by the master, or when the slave is restarted, the master reads the VSI**

**protocol version that the slave can use and selects the best one, choosing the highest version that is common to all other slaves and the master, thereby disclosing that the interface circuit tests all available protocols in communication with said content-server as a remote station and adjusts itself to a protocol proposed by the remote station).**

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to test all available protocols in communication with said content-server as a remote station and adjust the interface circuit to a protocol proposed by the remote station, as taught by Hughes et al., in the method of Murray et al., as modified by Redfern, Lawrence, Kukic and Kloninger et al., so as to match the capabilities of limited capacity remote stations.

However, Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., and Hughes et al., do not specifically show or disclose that ***said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Moutafov discloses the claimed method, including wherein ***said interface circuit prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event*** **(paragraphs 0043 and 0049 which disclose that HTTP infrastructure will time out idle connections, therefore, in order to provide an unlimited connection time,**

**when no traffic has been sent on a respective channel, the sending party sends a small no-op packet to keep the connection alive).**

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to let said interface circuit prevent typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event, as taught by Moutafov, in the method of Murray et al., as modified by Redfern, Lawrence, Kukic Kloninger et al., and Hughes et al., so as to keep the connection between the transmitting and the receiving stations alive, even during long pauses of inactivity.

**Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern (U.S. Patent Publication # 7,313,130 B2)** and further in view of **Lawrence (U.S. Patent Publication # 6,825,196 B1)** and further in view of **Kukic (U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Hughes et al. (U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov (U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Okamoto et al. (U.S. Patent Application Publication # 2008/0235427 A1)** and further in view of **Pattabhiraman et al. (U.S. Patent Publication # 2002/0059408 A1).**

Consider **claim 16, and as applied to claim 15 above,** Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., and Moutafov, disclose the claimed method, except wherein ***said interface circuit (SS) is designed as a plug-in card for a telecommunication device (TE) or a workstation (AP) characterized in that depending on the bandwidth demand said plug-in card automatically activates additional communication channels by means of which a dynamic channel management and bandwidth control is achieved.***

In the same field of endeavor, Okamoto et al. disclose the claimed method, wherein ***said interface circuit (SS) is designed as a plug-in card for a telecommunication device (TE) or a workstation (AP)*** **(Fig. 2 that shows a plug-in I/O card 20 for a host (PC) 10; paragraphs 0002-0003 disclose an electronic device (PC) with interface 11 to plug-in card 20; further disclosing that some such PC plug-in cards function as a modem card, a network (LAN) card, a hard disk drive, a transmitter, etc.).**

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to design said interface circuit (SS) as a plug-in card for a telecommunication device (TE) or a workstation (AP), as taught by Okamoto et al., in the method of Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., and Moutafov, so as to provide added network interface and storage capability built into a PC.

However, Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., Moutafov, and Okamoto et al., do not specifically show or disclose

that ***said plug-in card is characterized in that depending on the bandwidth demand, said plug-in card automatically activates additional communication channels by means of which a dynamic channel management and bandwidth control is achieved***.

In the same field of endeavor, **Pattabhiraman et al.** disclose the claimed method, including wherein ***said plug-in card is characterized in that depending on the bandwidth demand, said plug-in card automatically activates additional communication channels by means of which a dynamic channel management and bandwidth control is achieved*** **(Fig. 1 that shows an arbiter node 121 allocating bandwidth for dynamic channels passing over a shared channel of a network; paragraph 0052 which discloses allocating shared communication capacity to different network nodes in order to establish bandwidth control and maintain QoS; Further disclosing that these channels are referred to as "dynamic" channels to reflect their characteristics of not necessarily having a constant demand for data capacity; paragraphs 0056 and 0058 which further disclose that management of the dynamic channels involves both provisioning of channels (creation and termination of channels), as well as bandwidth management (allocation and de-allocation of bandwidth within the shared channel); further disclosing an arbiter node 121 (in Fig. 1) that includes a CAC (connection admission control) module 180, responsible for creating and terminating dynamic channels; when a representative node C 120 initiates creation of a new inbound**

**dynamic channel 142, it makes a channel request 160 to CAC, and if CAC admits the requested channel, it updates channel data 175 according to request).**

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to design said plug-in card characterized in that depending on the bandwidth demand, said plug-in card automatically activates additional communication channels by means of which a dynamic channel management and bandwidth control is achieved, as taught by Pattabhiraman et al., in the method of Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., Moutafov, and Okamoto et al., so as to equitably distribute available bandwidth among all the participating nodes in the network.

Consider **claim 17,** and **as it applies to claim 15 above,** Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., and Moutafov, further disclose the claimed method, wherein, in order to avoid time out problems, the interface circuit (SS) emits a message confirming complete reception of data obtained by said content-server so that the workstation (AP) remains in the tele-teaching or e-learning event, even though broadband transmission is not possible (in Moutafov reference, paragraphs 0043 and 0049 which disclose that HTTP infrastructure will time out idle connections, therefore, in order to provide an unlimited connection time, when no traffic has been sent on a respective channel, the sending party sends a small no-op packet to keep the connection alive).

Consider **claim 18,** and **as it applies to claim 17 above,** Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., and Moutafov, further disclose the claimed method, wherein said data comprises an image file (in Murray et al. reference, column 1, line 23 through column 2, line 26, that disclose Interactive Distance Learning (IDL) using videoconferencing networks, Microsoft's NetMeeting using audio and video (image) data).

**Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern (U.S. Patent Publication # 7,313,130 B2)** and further in view of **Lawrence (U.S. Patent Publication # 6,825,196 B1)** and further in view of **Kukic (U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Hughes et al. (U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov (U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Nessett et al. (U.S. Patent Publication # 5,742,759).**

Consider **claim 19,** and **as it applies to claim 15 above,** Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., and Moutafov disclose the claimed method, including recording the login procedure (in Murray et al. reference, Fig. 1, Winframe server 15; column 6, lines 16-30 which disclose that a request to login session is sent through the remote router 34, through the ISDN line 36

to the Winframe server 15, where the client software logs into an account; further disclosing that the account information is maintained on each of the remote laptops (i.e. workstations AP), thereby disclosing recording the login procedure).

However, Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al., and Moutafov do not explicitly disclose storing an access authorization in said memory unit (SP) of the interface circuit (SS) to secure establishment of the connection and the test process against unauthorized access.

In the same field of endeavor, Nessett et al. disclose the claimed method, further comprising storing an access authorization in said memory unit (SP) of the interface circuit to secure establishment of the connection and the test process against unauthorized access (abstract that describes a method for securely controlling access to resources in a distributed computer system, by storing and binding a group identification (e.g. an ACL or Access Control List) to a target object (e.g. a connection or a test process) and then using membership checking to determine whether a client object which requests access to the target object is a member of a group with access rights to the target object).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to store an access authorization in said memory unit (SP) of the interface circuit to secure establishment of the connection and the test process against unauthorized access, as taught by Nessett et al., in the method of Murray et al., as modified by Redfern, Lawrence, Kukic, Kloninger et al., Hughes et al.,

and Moutafov, so as to provide a secure method for controlling access to resources in a distributed computing system.

**Claims 20 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern (U.S. Patent Publication # 7,313,130 B2)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Kukic (U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Hughes et al. (U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov (U.S. Patent Application Publication # 2003/0225889 A1).**

Consider **claim 20**, Murray et al. show and disclose a virtual electronic teaching system, with a central content-server for an e-learning or tele-teaching event and with a workstation (AP) of a person participating in the e-learning or tele-teaching event, using a telecommunication network connected to said content-server (Abstract that discloses a distance learning system as a client/server implementation with remote client facilities; Fig. 1 that shows a Central Office 10 that provides learning resources (mainframes 12 and 14 as central content-servers, storage 16 and router 20 with interface circuits (router 34) that provide connections to workstations (AP) (remote stations 32) of a person participating in the e-learning or tele-teaching event; column 2, line 60 through column 3, line 27 disclose configuring multiple remote training facilities to make them

portable and provide the online experience to students when using a real-time environment of a host system using ISDN telecommunication technology);
wherein the interface circuit is connected via at least a standardize interface (SS) ***vicarious for said telecommunication device (TE) and*** registers itself to said content-server by means of the login procedure stored in the memory unit (SP) (Fig. 1 that shows a remote hub router 34 (interface circuit) connected via a standardize interface; column 6, lines 1-30 which describe how the client software registers itself to content-servers 12 (mainframes) and 14 (NT servers and UNIX servers) by means of login procedures stored in the memory of laptops and Winframe servers).

However, Murray et al. do not specifically disclose a telecommunication network with a main distribution connected to an exchange (VST) and an access multiplexer and a splitter or a splitter connected to or integrated in the main distribution, the system comprising an analog or digital telecommunication device (TE); and an interface circuit (SS) with a memory unit (SP) and a microprocessor (MP), structured and dimensioned for connection to said telecommunication device (TE), a first end of said interface circuit being connected to the main distribution via a subscriber circuit or a subscriber modem and a splitter, or a network termination (NTBA) or subscriber lines (AL) and a second end of said interface circuit being connected to said workstation (AP), wherein the interface circuit automatically tests at least a bandwidth available to the telecommunication device (TE) ***and all available protocol in communication with said content-server as a remote station and adjusts itself to a protocol proposed by said remote station*** by transmitting at least one test signal stored in the memory

unit (SP) to said-content server***, so that said interface circuit (SS) prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Redfern shows and discloses the claimed system, further comprising a main distribution connected to an exchange (VST) and an access multiplexer and a splitter or a splitter connected to or integrated in the main distribution, the system comprising an analog or digital telecommunication device (TE); and an interface circuit (SS) structured and dimensioned for connection to said telecommunication device (TE), a first end of said interface circuit being connected to the main distribution via a subscriber circuit or a subscriber modem and a splitter, or a network termination (NTBA) or subscriber lines (AL) and a second end of said interface circuit (SS) being connected to said workstation (AP) (Figs. 1a and 1b that show a telecommunication network (PSTN 205 and Internet 208) with a main distribution (101) connected to an exchange (Central Office 200) and an access multiplexer (DSLAM 207) and a splitter (POTS Splitter 201), or a splitter (POTS Splitter 201) connected to or integrated in the main distribution, the system further comprising an analog or digital telecommunication device (in Fig. 1b, phone 105), and an interface circuit (in Fig. 1b, POTS splitter 102) structured and dimensioned for connection to said telecommunication device, a first end of said interface circuit being connected to the main distribution via a subscriber circuit (ADSL circuit using twisted pair 101 shown in Figs. 1a-1b), or a subscriber modem (included in the ATU-R 103) and a splitter (POTS

Splitter 102 in Fig. 1b, and 201 in Fig. 1a), or a network termination (NTBA) (ATU-C Termination Units 206 shown in Fig. 1a), or subscriber lines (AL) (lines 202 and 203 shown in Fig. 1a); column 3, lines 29-58 disclose the same details), and a second end of said interface circuit being connected to said workstation (Fig. 1b that shows the second end of the POTS splitter 102 connected to workstation 104 through a termination unit 103; column 3, lines 29-58 disclose the same details).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a telecommunication network with a main distribution connected to an exchange (VST) and an access multiplexer and a splitter, or a splitter connected to or integrated in the main distribution, the system comprising an analog or digital telecommunication device; and an interface circuit structured and dimensioned for connection to said telecommunication device, a first end of said interface circuit being connected to the main distribution via a subscriber circuit, or a subscriber modem and a splitter, or a network termination (NTBA), or subscriber lines (AL) and a second end of said interface circuit being connected to said workstation, as taught by Redfern, in the system of Murray et al., so as to provide cost-effective network connectivity to remotely distributed stations.

However, Murray et al., as modified by Redfern, do not specifically disclose that the interface circuit includes a memory unit and a microprocessor, and that the interface unit automatically tests at least a bandwidth available to the telecommunication device ***and all available protocol in communication with said content-server as a remote station and adjusts itself to a protocol proposed by said remote station*** by

transmitting at least one test signal stored in the memory unit to said content-server, ***so that said interface circuit (SS) prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Kloninger et al. show and disclose the claimed system, wherein the interface circuit includes a memory unit and a microprocessor (Fig. 1A that shows a central controller 106 acting as the interface circuit with memory 106 to store test measurements and a policy engine 120 that includes a microprocessor to process test measurements; paragraphs 0031 and 0035 disclose the same details), and the interface unit automatically tests at least a bandwidth available to the telecommunication device (paragraph 0002 that discloses streaming e-learning applications; Fig. 1A that shows a Test Agent 124; paragraph 0026 which discloses that the test agent 124 may automatically provide RTSP and WMS streaming tests, which are useful in determining overall stream quality and bandwidth available for streaming).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an interface circuit that includes a memory unit and a microprocessor, and the interface unit automatically tests at least a bandwidth available to the telecommunication device, as taught by Kloninger et al., in the system of Murray et al., as modified by Redfern, so as to determine the data rate the remote station is capable of handling.

However, Murray et al., as modified by Redfern and Kloninger et al., do not specifically disclose that the interface unit automatically tests ***all available protocol in***

***communication with said content-server as a remote station and adjusts itself to a protocol proposed by said remote station*** by transmitting at least one test signal stored in the memory unit to said content-server, ***so that said interface circuit (SS) prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event.***

In the same field of endeavor, Kukic shows and discloses the claimed system, wherein the interface circuit transmits at least one test signal stored in the memory unit to said content-server (Fig. 1 that shows a transmitter 24 and a receiver 36; paragraph 0011 which discloses a method for determining link characteristics in order to calculate the optimal data rate for a group of links, by transmitting a test signal over the link).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an interface circuit that transmits at least one test signal stored in the memory unit to said content-server, as taught by Kukic, in the system of Murray et al., as modified by Redfern and Kloninger et al., so as to determine the data rate the remote station is capable of handling.

However, Murray et al., as modified by Redfern, Kloninger et al., and Kukic, do not specifically show or disclose that the interface unit automatically tests ***all available protocol in communication with said content-server as a remote station and adjusts itself to a protocol proposed by said remote station, and*** by transmitting at least one test signal stored in the memory unit to said content-server, ***so that said interface circuit (SS) prevents typical "time out" problems by indicating the***

***complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***. [Note: Only the highlighted and italicized text is not disclosed.]

In the same field of endeavor, Hughes et al. disclose the claimed system, wherein the interface unit automatically tests ***all available protocol in communication with said content-server as a remote station and adjusts itself to a protocol proposed by said remote station*** **(column 12, lines 55-62 which disclose that a master controlling connections on a VSI (Virtual Switch Interface) is required to select the version of the VSI protocol used by the slaves; further disclosing that when a new slave is discovered by the master, or when the slave is restarted, the master reads the VSI protocol version that the slave can use and selects the best one, choosing the highest version that is common to all other slaves and the master, thereby disclosing that the interface circuit tests all available protocols in communication with said content-server as a remote station and adjusts itself to a protocol proposed by the remote station).**

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to enable the interface unit to automatically tests all available protocol in communication with said content-server as a remote station and adjusts itself to a protocol proposed by said remote station, as taught by Hughes et al., in the system of Murray et al., as modified by Redfern, Kloninger et al., and Kukic, so as to match the capabilities of limited capacity remote stations.

However, Murray et al., as modified by Redfern, Kloninger et al., Kukic, and Hughes et al., do not specifically disclose that ***said interface circuit (SS) prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event***.

In the same field of endeavor, Moutafov discloses the claimed system, including wherein ***said interface circuit (SS) prevents typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event*** **(paragraphs 0043 and 0049 which disclose that HTTP infrastructure will time out idle connections, therefore, in order to provide an unlimited connection time, when no traffic has been sent on a respective channel, the sending party sends a small no-op packet to keep the connection alive)**.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to enable said interface circuit (SS) to prevent typical "time out" problems by indicating the complete reception of an image file in such a way that said workstation (AP) remains connected to said e-learning or tele-teaching event, as taught by Moutafov, in the system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, and Hughes et al., so as to keep the connection between the transmitting and the receiving stations alive, even during long pauses of inactivity.

Consider **claim 23,** and **as it applies to claim 20 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., and Moutafov, further disclose the claimed virtual electronic teaching system, wherein an intelligent operating element (BT) is connected to the interface circuit (SS) (in Murray et al. reference, Fig. 1 that shows trainee laptops 32 connected to remote site hub router 34; column 7, lines 1-3 disclose the same details).

**Claims 21 and 24-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern (U.S. Patent Publication # 7,313,130 B2)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Kukic (U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Hughes et al. (U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov (U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Okamoto et al. (U.S. Patent Application Publication # 2008/0235427 A1).**

Consider **claim 21,** and **as it applies to claim 20 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., and Moutafov, disclose the claimed virtual electronic teaching system, except wherein the interface circuit (SS) further comprises a hard disk, as well as at least one of each type of conventional plug-type connectors (COM, USB) for connection of the telecommunication device (TE) to the workstation (AP).

In the same field of endeavor, Okamoto et al. show and disclose the claimed virtual electronic teaching system, wherein the interface circuit further comprises a hard disk, as well as at least one of each type of conventional plug-type connectors (COM, USB) for connection of the telecommunication device (TE) to the workstation (AP) (Fig. 2 that shows an I/O card 20 (interface circuit) that comprises a microprocessor 200, read-only memory 202, and a 9-pin plug-in connector for plugging into the card interface 11 in the host (PC or workstation) 10; paragraphs 0027-0031 disclose the details of the I/O card 20 and host 10, with paragraph 0029 further disclosing that a USB (Universal Serial Bus) interface is also provided for I/O card 20; furthermore, paragraph 0003 discloses that there are some PC cards (I/O cards) that function as a modem card, a network card, a hard disk drive, etc.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an interface circuit with a hard disk, as well as at least one of each type of conventional plug-type connectors (COM, USB) for connection of the telecommunication device (TE) to the workstation (AP), as taught by Okamoto et al., in the virtual electronic teaching system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., and Moutafov, so as to provide added network interface and storage capability built into a PC (remote user workstation).

Consider **claim 24,** and **as it applies to claim 20 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., and Moutafov, disclose the

claimed virtual electronic teaching system, except wherein the interface circuit is designed as a plug-in card for a network station or a PC.

In the same field of endeavor, Okamoto et al. show and disclose the claimed virtual electronic teaching system, wherein the interface circuit is designed as a plug-in card for a network station or a PC (Fig. 2 that shows a plug-in I/O card 20 for a host (PC) 10; paragraphs 0002-0003 disclose an electronic device (PC) with interface 11 to plug-in card 20; further disclosing that some such PC plug-in cards function as a modem card, a network (LAN) card, a hard disk drive, a transmitter, etc.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to design an interface circuit as a plug-in card for a network station or a PC, as taught by Okamoto et al., in the virtual electronic teaching system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., and Moutafov, so as to provide added network interface and storage capability built into a PC.

Consider **claim 25,** and **as it applies to claim 24 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., further disclose the claimed virtual electronic teaching system, wherein the plug-in card comprises at least one microprocessor (MP) and a LAN interface designed as a bus interface (in Okamoto et al. reference, Fig. 2 that shows a Processor module 200 and different interfaces of the I/O card 20, including I/O bus interface 204 and External interface 205; paragraphs 0027 and 0029 further describe the I/O card 20 as a plug-in

card for host 10 (a PC), that also includes basic driver 141 for initializing card 20 and other standard device drivers 142; further disclosing that a system I/O register pre-stores plug-and-play information necessary for realizing a plug-and-play functionality for the I/O card 20; and further disclosing that the card can be used as a LAN interface with 4-bit data bus DAT0-3);

wherein the LAN interface is connected to a PCI bus transmitting control information (in Murray et al. reference, Fig. 1; column 4, lines 37-45 which disclose that router 20 comprises network interfaces resident on port adapters, that provide a connection between the router's Peripheral Component Interconnect (PCI) busses and external networks, supporting plurality of interfaces, such as Ethernet, Token Ring, FDDI, ATM, serial, ISDN, and HSST);

wherein a network station or a PC constitutes a host system (in Okamoto et al. reference, Fig. 2 that shows a PC with a plug-in I/O (LAN) card 20 acting as a host system; paragraphs 0027 and 0029 disclose the same details).

Consider **claim 26,** and **as it applies to claim 25 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., further disclose the claimed virtual electronic teaching system, wherein said plug-in card is detected as a LAN card by a plug and play function or by standard drivers when said plug in card is plugged into said host system (in Okamoto et al. reference, Fig. 2 that shows an initialization basic driver 141 for initializing the I/O card 20 when the I/O card is plugged into the card interface 11, and device drivers 142 in the host 10;

paragraphs 0027 and 0029 further describe the I/O card 20 as a plug-in card for host 10, that also includes basic driver 141 for initializing card 20 and other standard device drivers 142; further disclosing that a system I/O register 22 pre-stores plug-and-play information necessary for realizing a plug-and-play functionality for the I/O card 20; and further disclosing that the I/O card 20 is used as a LAN interface).

**Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern** (**U.S. Patent Publication # 7,313,130 B2)** and further in view of **Kloninger et al.** (**U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Kukic** (**U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Hughes et al.** (**U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov** (**U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Okamoto et al.** (**U.S. Patent Application Publication # 2008/0235427 A1)** and further in view of **Rothman et al.** (**U.S. Patent Application Publication # 2005/0027954 A1).**

Consider **claim 22,** and **as it applies to claim 21 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., disclose the claimed virtual electronic teaching system, except wherein a read-only memory (SP) is exchangeable.

In the same field of endeavor, Rothman et al. show and disclose the claimed virtual electronic teaching system, wherein a read-only memory is exchangeable (Fig. 7,

removable storage unit 722 and interface 720; paragraph 0063 which discloses a removable storage unit 722 and an interface 720, wherein the removable storage unit may be an EPROM (Erasable Programmable ROM), or Flash memory 100 and associated socket which allow software and data to be transferred from removable storage unit 722 to computer system 700).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a read-only memory that is exchangeable, as taught by Rothman et al., in the virtual electronic teaching system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., so as to provide added additional non-volatile storage to the computer system.

**Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern** (**U.S. Patent Publication # 7,313,130 B2)** and further in view of **Kloninger et al.** (**U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Kukic** (**U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Hughes et al.** (**U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov** (**U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Okamoto et al.** (**U.S. Patent Application Publication # 2008/0235427 A1)** and further in view of **Klingman** (**U.S. Patent Publication # 5,799,285).**

Consider **claim 27,** and **as it applies to claim 24 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., disclose the claimed virtual electronic teaching system, except wherein said plug-in card comprises a call number memory with a number of participants or network stations authorized to access data, wherein, depending on a transmitted call number, the call number is verified or the connection is established to the authorized caller.

In the same field of endeavor, Klingman shows and discloses the claimed virtual electronic teaching system, wherein said plug-in card comprises a call number memory with a number of participants or network stations authorized to access data, wherein, depending on a transmitted call number, the call number is verified or the connection is established to the authorized caller (Fig. 1, memory 22 that is used to store a list of sellers' Caller IDs and related data; Fig. 4 shows similar memory 158 for buyers; column 7, lines 1-25 disclose caller ID that provides security features by allowing call-back confirmation and cross-checking the caller's ID with the information (telephone number) provided by a registered caller, before establishing a connection; column 14, lines 42-67 describe the same details for a buyer).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a call number memory with a number of participants or network stations authorized to access data, wherein, depending on a transmitted call number, the call number is verified or the connection is established to the authorized caller, as taught by Klingman, in the virtual electronic teaching system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov,

and Okamoto et al., so as to provide added secure connections to the authorized users for access to the proprietary data.

**Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern (U.S. Patent Publication # 7,313,130 B2)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Kukic (U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Hughes et al. (U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov (U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Okamoto et al. (U.S. Patent Application Publication # 2008/0235427 A1)** and further in view of **Stephenson et al. (U.S. Patent Publication # 2007/0136480 A1).**

Consider **claim 28,** and **as it applies to claim 24 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., disclose the claimed virtual electronic teaching system, except wherein the plug-in card automatically breaks a connection in case of a pause in transmission lasting longer than a pre-selected waiting time, and restores the connection when data are once again pending.

In the same field of endeavor, Stephenson et al. disclose the claimed virtual electronic teaching system, wherein the plug-in card automatically breaks a connection in case of a pause in transmission lasting longer than a pre-selected waiting time, and

restores the connection when data are once again pending (paragraph 0058 which discloses that if a client detects that the connection to a server is broken, it will immediately re-establish the connection with another post operation; paragraph 0082 which further discloses that the reasons for terminating a connection include extended delay between transmission and receipt of the communication, loss of connection, end of data transmission by a client, etc.; paragraph 0096 which teaches that the breaks in communications may be determined by the client or the server through monitoring heartbeat signals, connection signals, lack of communication beyond a set amount of time, etc.; further disclosing that as long as the client has not requested a disconnection, the client and server may take immediate action to reestablish communications by client initiating a post operation and the server changing state to reconnect, however, after an extended period of time of inactivity, the client or server will give up and terminate the connection).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to automatically break a connection in case of a pause in transmission lasting longer than a pre-selected waiting time, and restore the connection when data are once again pending, as taught by Stephenson et al., in the virtual electronic teaching system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., so as to maintain the connection even after temporary disruption in the network.

**Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murray et al. (U.S. Patent Publication # 6,356,943)** in view of **Redfern** (**U.S. Patent Publication # 7,313,130 B2)** and further in view of **Kloninger et al. (U.S. Patent Application Publication # 2004/0073596 A1)** and further in view of **Kukic** (**U.S. Patent Application Publication # 2003/0169780 A1)** and further in view of **Hughes et al.** (**U.S. Patent Publication # 6,434,612 B1)** and further in view of **Moutafov** (**U.S. Patent Application Publication # 2003/0225889 A1)** and further in view of **Okamoto et al.** (**U.S. Patent Application Publication # 2008/0235427 A1)** and further in view of **Pattabhiraman et al.** (**U.S. Patent Publication # 2002/0059408 A1).**

Consider **claim 29,** and **as it applies to claim 24 above,** Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., disclose the claimed virtual electronic teaching system, except wherein, depending on a bandwidth demand, the plug-in card automatically activates additional communication channels to achieve dynamic channel management and bandwidth control.

In the same field of endeavor, Pattabhiraman et al. disclose the claimed virtual electronic teaching system, wherein, depending on a bandwidth demand, the plug-in card automatically activates additional communication channels to achieve dynamic channel management and bandwidth control (Fig. 1 that shows an arbiter node 121 allocating bandwidth for dynamic channels passing over a shared channel of a network; paragraph 0052 which discloses allocating shared communication capacity to different

network nodes in order to establish bandwidth control and maintain QoS; Further disclosing that these channels are referred to as "dynamic" channels to reflect their characteristics of not necessarily having a constant demand for data capacity; paragraphs 0056 and 0058 which further disclose that management of the dynamic channels involves both provisioning of channels (creation and termination of channels), as well as bandwidth management (allocation and de-allocation of bandwidth within the shared channel); further disclosing an arbiter node 121 (in Fig. 1) that includes a CAC (connection admission control) module 180, responsible for creating and terminating dynamic channels; when a representative node C 120 initiates creation of a new inbound dynamic channel 142, it makes a channel request 160 to CAC, and if CAC admits the requested channel, it updates channel data 175 according to request).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to automatically activate additional communication channels to achieve dynamic channel management and bandwidth control, as taught by Pattabhiraman et al., in the virtual electronic teaching system of Murray et al., as modified by Redfern, Kloninger et al., Kukic, Hughes et al., Moutafov, and Okamoto et al., so as to equitably distribute available bandwidth among all the participating nodes in the network.

***Response to Arguments***

Applicant's arguments filed 06/02/2009 have been fully considered but they are not persuasive. The examiner's cited prior art references do adequately disclose each

and every amended claim element, rendering the amended claims obvious and therefore non-novel. The examiner's response to the applicant's argument is shown below:

On page 7 of the "REMARKS" section, the applicant argues that independent claims 15 and 20 now include the text "establishing a connection **vicarious** for the telecommunication device". The use of the term "vicarious" without disclosing corresponding structural details in the claim of who is acting in place of whom, makes the claim indefinite.

The other claim amendments are simply rearrangement of text from the previously filed dependent claims 16 and 17 to the amended independent claims 15 and 20, and from previously filed dependent claims 24 and 29 to the amended dependent claim 16, which has been responded to in the previous office action, and requires no new response.

The examiner has therefore concluded that none of the amended claims are novel, as they are all obvious to the cited prior art, and therefore are not allowable in their present form. Thus, **claims 15-29 remain rejected.**

***Conclusion***

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kishin G. Belani whose telephone number is (571) 270-1768. The Examiner can normally be reached on Monday-Friday from 6:00 am to 5:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tonia Dollinger can be reached on (571) 272-4170. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*/K. G. B./*
*Examiner, Art Unit 2443*

January 27, 2010

/George C Neurauter, Jr./
Primary Examiner, Art Unit 2443